WHAT IS CLAIMED IS:

1. A distributed system for publishing and retrieving content in a network, comprising:

a plurality of computer systems connected together in a peer-to-peer fashion;

one or more agent applications associated with the computer systems for allowing the computer systems to publish and retrieve content from the network by initiating peer-to-peer interactions across the network involving given transaction costs.

2. The distributed system of Claim 1, wherein the computer systems have characterized network resources that can be contributed to the network in return for a predetermined amount of credits that are accumulated by those computer systems contributing resources to the network such that the computer systems can exchange the credits for performing interactions across the network.

3. The distributed system of Claim 2, wherein the network resources include any of disk space, bandwidth, and CPU processing cycles.

4. The distributed system of Claim 2, wherein the interactions are performed by the agent applications.

5. The distributed system of Claim 2, wherein credits are purchased directly without contributing resources to the network.

6. The system of Claim 1, wherein each interaction across the network involves a transaction cost.

7. The system of Claim 6, wherein the interactions are performed by the agent applications.

8. The distributed system of Claim 1, further comprising a credit server for maintaining a database of previously used credits and for authorizing a valid credit transaction between interacting agent applications within the network.

9. The distributed system of Claim 1, wherein the agent applications comprise one or more client agent applications for enabling the computing systems access and interact with the agent applications in the network, one or more broker agent applications for performing brokering transactions between the agent applications in the network, one or more tracker agent applications for providing a listing of available resources within the network, one or more reputation agent applications for tracking the reputations of the computer systems in the network, and one or more payment agent applications for validating credit transactions within the network.

10. The distributed system of Claim 9, wherein the one or more broker agent applications directly provide brokered network resources to requesting computer systems within the network.

11. The distributed system of Claim 9, wherein the one or more tracker agent applications include one or more metatracker agent applications for maintaining the network location of the one or more active broker agent applications and a listing of the associated resources that those active broker agent applications broker within the network, one or more content tracker agent applications for storing dinodes to locate data blocks constituting a published data file on the network, and one or more publication tracker agent applications for recording storage locations on particular computing systems where the data blocks are stored.

12. The distributed system of Claim 11, wherein the tracker agent applications maintain public information relating to the various agent applications within the network.

13. The distributed system of Claim 9, wherein the client, broker, tracker, reputation, and payment agent applications are integrated as a single agent application.

14. The distributed system of Claim 9, wherein the peer-to-peer interactions are performed in accordance with a micropayment transaction process.

15. The distributed system of Claim 14, wherein the micropayment transaction process includes causing the client agent application associated with a first computing system to offer a given amount of credits to a broker application associated with a second computing system for

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performing the transaction within the network, causing the broker application to loan to the client application an amount of credits equal to the offered amount of credits to enable the first and second computing systems to engage in the transaction, causing the payment agent to verify the offered credits to insure that the offered credits have not been previously spent in a prior transaction and withdraw the offered credits from future use within the network, and if verified, causing the broker application to complete the transaction and retract the loaned credits in return for new credits that are associated with the second computing system in an amount equal to the amount of offered credits.

16. The distributed system of Claim 11, wherein the broker agent applications publish content to the network by receiving an original file to be published to the network, dissecting the original file into a series of pieces of the original file, further dissecting each piece of the original file into a predetermined number of file blocks, generating a respective block identification tag for each of the file blocks, and storing the file blocks on one or more storage block servers within the network.

17. The distributed system of Claim 16, wherein the broker agent applications further generate a sharemap for the original file that describes how to reassemble the pieces of the original file from the file blocks and the original file from the pieces of the original file.

18. The distributed system of Claim 17, wherein portions of the sharemap are stored at one or more dinodes within the network, and wherein the content tracker maintains information about the dinodes within the network so that the original file can be reassembled.

19. The distributed system of Claim 16, wherein the file blocks are retrieved in parallel to reassemble the original file.

20. The method of Claim 19, wherein only a portion of the file blocks are needed to reassemble the original file.

21. The distributed system of Claim 1, wherein the system uses a protocol for transmitting messages between the agents, the protocol including a transport layer for moving secure data between the agents, an encryption and authentication layer for encrypting and decrypting the data, a conversation layer for associating initiating messages with their responding messages counterparts, and a transaction layer for enabling the interactions between the agents in the network.

22. A distributed system for publishing and retrieving content in a network, comprising:

a plurality of computer systems connected together in a peer-to-peer fashion and having characterized network resources that can be contributed to the network in return for a predetermined amount of credits that are accumulated by those computer systems contributing resources to the network such that the computer systems can exchange the credits for performing interactions across the network; and

one or more agent applications associated with the computer systems for allowing the computer systems to publish and retrieve content from the network by initiating the peer-to-peer interactions across the network between the agent applications.

23. The distributed network of Claim 22, wherein the network resources include any of disk space, bandwidth, and CPU processing cycles.

24. The distributed network of Claim 23, wherein each interaction across the network involves a transaction cost.

25. The distributed system of Claim 22, further comprising a credit server for maintaining a database of previously used credits and for authorizing a valid credit transaction between interacting agent applications within the network.

26. The distributed system of Claim 22, wherein the agent applications comprise one or more client agent applications for enabling the computing systems access and interact with the agent applications in the network, one or more broker agent applications for performing brokering transactions between the agent applications in the network, one or more tracker agent

applications for providing a listing of available resources within the network, one or more reputation agent applications for tracking the reputations of the computer systems in the network, and one or more payment agent applications for validating credit transactions within the network.

27. The distributed system of Claim 26, wherein the one or more broker agent applications directly provide brokered network resources to requesting computer systems within the network.

28. The distributed system of Claim 26, wherein the one or more tracker agent applications include one or more metatracker agent applications for maintaining the network location of the one or more active broker agent applications and a listing of the associated resources that those active broker agent applications broker within the network, one or more content tracker agent applications for storing dinodes to locate data blocks constituting a published data file on the network, and one or more publication tracker agent applications for recording storage locations on particular computing systems where the data blocks are stored.

29. The distributed system of Claim 28, wherein the tracker agent applications maintain public information relating to the various agent applications within the network.

30. The distributed system of Claim 26, wherein the client, broker, tracker, reputation, and payment agent applications are integrated as a single agent application.

31. The distributed system of Claim 26, wherein the peer-to-peer interactions are performed in accordance with a micropayment transaction process.

32. The distributed system of Claim 31, wherein the micropayment transaction process includes causing the client agent application associated with a first computing system to offer a given amount of credits to a broker application associated with a second computing system for performing the transaction within the network, causing the broker application to loan to the client application an amount of credits equal to the offered amount of credits to enable the first and second computing systems to engage in the transaction, causing the payment agent to verify the offered credits to insure that the offered credits have not been previously spent in a prior

transaction and withdraw the offered credits from future use within the network, and if verified, causing the broker application to complete the transaction and retract the loaned credits in return for new credits that are associated with the second computing system in an amount equal to the amount of offered credits.

33. The distributed system of Claim 28, wherein the broker agent applications publish content to the network by receiving an original file to be published to the network, dissecting the original file into a series of pieces of the original file, further dissecting each piece of the original file into a predetermined number of file blocks, generating a respective block identification tag for each of the file blocks, and storing the file blocks on one or more storage block servers within the network.

34. The distributed system of Claim 33, wherein the broker agent applications further generate a sharemap for the original file that describes how to reassemble the pieces of the original file from the file blocks and the original file from the pieces of the original file.

35. The distributed system of Claim 34, wherein portions of the sharemap are stored at one or more dinodes within the network, and wherein the content tracker maintains information about the dinodes within the network so that the original file can be reassembled.

36. The distributed system of Claim 33, wherein the file blocks are retrieved in parallel to reassemble the original file.

37. The distributed system of Claim 36, wherein only a portion of the file blocks are needed to reassemble the original file.

38. The distributed system of Claim 22, wherein the system uses a protocol for transmitting messages between the agents, the protocol including a transport layer for moving secure data between the agents, an encryption and authentication layer for encrypting and decrypting the data, a conversation layer for associating initiating messages with their responding messages

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counterparts, and a transaction layer for enabling the interactions between the agents in the network.

39. A distributed system for publishing and retrieving content in a network, comprising:

a plurality of computer systems connected together in a peer-to-peer fashion and having characterized network resources that can be contributed to the network in return for a predetermined amount of credits that are accumulated by those computer systems contributing resources to the network such that the computer systems can exchange the credits for performing interactions across the network; and

a global pool of agent applications distributed across the network for allowing the computer systems to publish and retrieve content from the network by initiating the peer-to-peer interactions across the network.

40. The distributed network of Claim 39, wherein the network resources include any of disk space, bandwidth, and CPU processing cycles.

41. The distributed network of Claim 39, wherein each interaction across the network involves a transaction cost.

42. The distributed system of Claim 39, further comprising a credit server for maintaining a database of previously used credits and for authorizing a valid credit transaction between interacting agent applications within the network.

43. The distributed system of Claim 39, wherein the global pool of agent applications comprises one or more client agent applications for enabling the computing systems access and interact with the agent applications in the network, one or more broker agent applications for performing brokering transactions between the agent applications in the network, one or more tracker agent applications for providing a listing of available resources within the network, one or more reputation agent applications for tracking the reputations of the computer systems in the network, and one or more payment agent applications for validating credit transactions within the network.

44. The distributed system of Claim 40, wherein the one or more broker agent applications directly provide brokered network resources to requesting computer systems within the network.

45. The distributed system of Claim 43, wherein the one or more tracker agent applications include one or more metatracker agent applications for maintaining the network location of the one or more active broker agent applications and a listing of the associated resources that those active broker agent applications broker within the network, one or more content tracker agent applications for storing dinodes to locate data blocks constituting a published data file on the network, and one or more publication tracker agent applications for recording storage locations on particular computing systems where the data blocks are stored.

46. The distributed system of Claim 45, wherein the tracker agent applications maintain public information relating to the various agent applications within the network.

47. The distributed system of Claim 43, wherein the client, broker, tracker, reputation, and payment agent applications are integrated as a single agent application.

48. The distributed system of Claim 43, wherein the peer-to-peer interactions are performed in accordance with a micropayment transaction process.

49. The distributed system of Claim 48, wherein the micropayment transaction process includes causing the client agent application associated with a first computing system to offer a given amount of credits to a broker application associated with a second computing system for performing the transaction within the network, causing the broker application to loan to the client application an amount of credits equal to the offered amount of credits to enable the first and second computing systems to engage in the transaction, causing the payment agent to verify the offered credits to insure that the offered credits have not been previously spent in a prior transaction and withdraw the offered credits from future use within the network, and if verified, causing the broker application to complete the transaction and retract the loaned credits in return for new credits that are associated with the second computing system in an amount equal to the amount of offered credits.

49. The distributed system of Claim 45, wherein the broker agent applications publish content to the network by receiving an original file to be published to the network, dissecting the original file into a series of pieces of the original file, further dissecting each piece of the original file into a predetermined number of file blocks, generating a respective block identification tag for each of the file blocks, and storing the file blocks on one or more storage block servers within the network.

50. The distributed system of Claim 49, wherein the broker agent applications further generate a sharemap for the original file that describes how to reassemble the pieces of the original file from the file blocks and the original file from the pieces of the original file.

51. The distributed system of Claim 50, wherein portions of the sharemap are stored at one or more dinodes within the network, and wherein the content tracker maintains information about the dinodes within the network so that the original file can be reassembled.

52. The distributed system of Claim 50, wherein the file blocks are retrieved in parallel to reassemble the original file.

53. The distributed system of Claim 52, wherein only a portion of the file blocks are needed to reassemble the original file.

54. The distributed system of Claim 39, wherein the system uses a protocol for transmitting messages between the agents, the protocol including a transport layer for moving secure data between the agents, an encryption and authentication layer for encrypting and decrypting the data, a conversation layer for associating initiating messages with their responding messages counterparts, and a transaction layer for enabling the interactions between the agents in the network.

55. A method for performing micropayment transactions in a distributed network, comprising the steps of:

offering a given amount of credits to a first party for performing a transaction within the network;

loaning to a second party an amount of credits equal to the offered amount of credits to enable the first and second parties to engage in the transaction;

verifying the offered credits to insure that the offered credits have not been previously spent in a prior transaction and withdrawing the offered credits from future use; and

if verified, completing the transaction and retracting the loaned credits to the second party in return for new credits that are associated with the first party in an amount equal to the amount of offered credits.

56. The method of Claim 55, wherein the transaction is a direct transaction.

57. The method of Claim 56, wherein during the direct transaction a request for network resources is transmitted directly to a broker agent that can fulfill the request by brokering the requested network resources.

58. The method of Claim 55, wherein the transaction is an indirect, transparent transaction.

59. The method of Claim 58, wherein during the indirect, transparent transaction a request for network resources is transmitted directly to one or more intermediate broker agents and wherein those intermediate broker agents locate a particular provisioning broker agent that can fulfill the request for the least cost and transmit the request to that provisioning broker agent to fulfill the request by brokering the requested network resources.

60. A method for performing a microaccount transaction in a distributed network, comprising the steps of:

initiating a transaction session between a requesting party and a fulfilling party within the network where the parties determine a financial relationship between them for guiding the transaction;

creating a token for use in a transaction between the parties, the transaction having a given cost, and associating a digital signature with the token;

verifying the authenticity of the token and associating an appropriate denomination with the token equal to the given cost for fulfilling the transaction;

fulfilling the transaction in exchange for the token; and

withdrawing the token from future use and associating a new token in an amount equal to the given cost with the fulfilling party.

61. The method of Claim 60, wherein the initiating step includes exchanging a shared secret encryption key between the parties.

62. The method of Claim 60, wherein the transaction is a direct transaction.

63. The method of Claim 62, wherein during the direct transaction a request for network resources is transmitted directly to a broker agent that can fulfill the request by brokering the requested network resources.

64. The method of Claim 60, wherein the transaction is an indirect, transparent transaction.

65. The method of Claim 64, wherein during the indirect, transparent transaction a request for network resources is transmitted directly to one or more intermediate broker agents and wherein those intermediate broker agents locate a particular provisioning broker agent that can fulfill the request for the least cost and transmit the request to that provisioning broker agent to fulfill the request by brokering the requested network resources.

66. A method for publishing content to a distributed network, comprising the steps of:

receiving an original file to be published to the network;

dissecting the original file into a series of pieces of the original file;

further dissecting each piece of the original file into a predetermined number of file blocks;

generating a respective block identification tag for each of the file blocks; and

storing the file blocks on one or more storage block servers within the network.

67. The method of Claim 66, further comprising the steps of generating a sharemap for the original file that describes how to reassemble the pieces of the original file from the file blocks and the original file from the pieces of the original file.

68. The method of Claim 67, wherein portions of the sharemap are stored at one or more dinodes within the network.

69. The method of Claim 66, wherein the block identification tag is generated by processing each file block with a cryptographic hash algorithm.

70. The method of Claim 66, wherein the block servers comprise available storage space on one or more allocated disk drives on one or more computer systems associated with the network.

71. The method of Claim 66, wherein the file blocks are retrieved in parallel to reassemble the original file.

72. The method of Claim 71, wherein only a portion of the file blocks are needed to reassemble the original file.

73. A protocol for transmitting messages between agents in a distributed network, comprising:
    a transport layer for moving secure data between the agents;
    an encryption and authentication layer for encrypting and decrypting the data;
    a conversation layer for associating initiating messages with their responding messages counterparts; and
    a transaction layer for enabling interactions between the agents in the network.

74. The protocol of Claim 73, wherein the transport layer utilizes TCP/IP to move secure data between the agents.

75. The protocol of Claim 73, wherein the conversation layer assigns a nonce to an initiating message and monitors responding messages for the occurrence of the nonce and associating the messages whose nonces match.

76. The protocol of Claim 75, wherein the occurrence of the nonce in a responding message is in a hashed format.